We claim:

1. A gene construct comprising a reporter gene operably linked to a promoter containing a transcriptional regulatory element that is up-regulated by a transcription factor preferentially produced in neoplastic cells.

2. The gene construct of claim 1, wherein the transcriptional regulatory element is selected from the group consisting of a β-catenin response element, an E2F response element, a Forkhead response element, and a Smad-2/Smad-3 response element.

3. The gene construct of claim 1, wherein the reporter gene encodes a protein selected from the group consisting of an enzyme, a bioluminescent protein, and a fluorescent protein.

4. The gene construct of claim 3, wherein the enzyme is selected from the group consisting of β-galactosidase, alkaline phosphatase, and chloramphenicol acetyltransferase.

5. The gene construct of claim 3, wherein the bioluminescent protein is a luciferase.

6. The gene construct of claim 3, wherein the fluorescent protein is selected from the group consisting of green fluorescent protein, yellow fluorescent protein, enhanced yellow fluorescent protein, red fluorescent protein and blue fluorescent protein.

7. A cell comprising the gene construct of any one of claims 1-6.

8. The cell of claim 7, wherein the cell is an embryonic stem cell.

9. A nonhuman mammal comprising the cell of claim 7.

10. The nonhuman mammal of claim 9, wherein the mammal further comprises a neoplastic transformation-promoting genetic modification.

11. A method of detecting a neoplasia a nonhuman mammal, comprising

(a) providing a nonhuman mammal, at least some of whose somatic cells are engineered cells comprising a genome comprising a neoplastic transformation-promoting genetic modification and a reporter gene operably linked to a transcriptional regulatory element wherein the transcriptional regulatory element is up-regulated by a transcription factor preferentially produced in neoplastic cells;

(b) allowing time for neoplastic transformation to occur in at least one of the engineered cells, and

(c) detecting a signal from the reporter gene expressed in the engineered cells.

12. The method of claim 7, wherein the nonhuman mammal is a mouse.